

REMARKS

Independent claims 1, 5, 10, 17 have been amended to further clarify the claimed invention.

Claim 1 is amended by adding to it language that states what is an implicit attribute of the tube in that the tube has an axial center, i.e. an axis. Further, the claim is amended to provide additional language defining the direction of heat flow within the catalytic monolith as being "inwardly" towards the axial center of the tube. Support for the amendatory language to claim 1 may be found throughout the specification, such as, at page 2, lines 21-27, where it states that the "heat may be directed inwardly to equalize the temperature profile across the tube". Also, the specification at page 3, lines 18-22 indicates that the "monolith catalyst allow heat to be directed to the center of the catalyst bed in each tube, reducing tube wall temperatures". This description indicates that the heat flow is in the radial direction away from the tube wall toward the central axis of the tube.

Claim 5 is amended by adding to it language that states what is an implicit attribute of the tube in that the tube has an axial center, i.e. an axis. Further, the claim is amended to provide additional language defining the direction of heat flow within the catalytic monolith as being "outwardly" away from the axial center of the tube. Support for the amendatory language to claim 5 may be found throughout the specification, such as, at page 2, lines 21-27, where it states that the heat may be directed outwardly to equalize the temperature profile across the tube. Also, the specification at page lines 18-31 indicates that the monolith catalyst provides for heat to be directed away from the center of the tube. This description indicates that the heat flow is in the radial direction away from central axis of the tube.

Concerning the amendments to claims 10 and 17, these are similar to those made to claims 1 and 5. The same text of the specification as noted above also provides support for the amendments made to claims 10 and 17.

Claims 1 and 5-23 have been rejected as being obvious over Addiego et al (U.S. 6,623,707) in view of Lachman et al. (U.S. 4,912,077). Reconsideration and withdrawal of this rejection in view of the amendments to the claims and the following remarks is hereby respectfully requested.

The Addiego patent discloses an axial flow reactor design containing monolithic catalyst having channels that direct flow in the axial direction. See e.g., column 2, lines 23-52; column 3, lines 11-22; column 7, lines 26-34; column 8, lines 4-7,15-18, 43-48; column 9, lines 33-35; and figures. There is no mention that the monolithic catalyst is designed to direct heat in any

direction; however, the axial flow reactor design is shown as having steam coils for the introduction of heat into the reactor. See e.g., column 3, lines 16-22; column 8, lines 31-34; and figures.

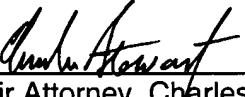
The Lachman patent discloses a unitary composite structure, which may be a honeycomb monolith consisting essentially of certain catalytically active metals. See e.g., column 2. There is nothing presented in the Lachman patent to suggest monolithic catalytic structures having a design for directing heat flow in directions toward or away from the central axis of a tubular reactor.

It is respectfully submitted that the combination of the cited references fails to teach all the limitations of the Applicant's claimed invention. There is no teaching or suggestion in the references of the use of monolithic catalyst having a structure that directs heat flow in the radial direction in a tube reactor containing such monolithic catalyst either away from or toward the axis of the tube reactor.

In view of the above remarks, the Applicant respectfully request an early allowance of the claims pending in the application.

Respectfully submitted,

JAMES A. WAMBAUGH

By 
Their Attorney, Charles W. Stewart
Registration No. 34,023
(713) 241-0260

P. O. Box 2463
Houston, Texas 77252-2463